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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/656,085	09/06/2000	Jerome Cros	2809.1	8870
5514	7590	01/09/2004	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			TAMAI, KARL I	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 01/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/656,085

Applicant(s)

CROS ET AL.

Examiner

Tamai IE Karl

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 15-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 15-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 7.30.2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. The rejection of the claims over Yamamura et al. (Yamamura)(JP 11-341722) is withdrawn.

3. Claims 1, 3, 4, 27, and 28 are rejected under 35 U.S.C. 102(a) as being anticipated by Takahashi et al. (Takahashi) (JP 11-341755). Takahashi teaches two non-overlapping coils around each of the 5 rotor poles. Takahashi teaches a stator with an armature magnet 17 (inherently 2P); an armature core (inherently ferromagnetic) having a number slots 20 and a number of teeth 21 separated from the stator core by an airgap; a commutator 22 with a number of segments greater than the number of rotor slots S, a concentrated winding rotor having a plurality of simple non-overlapping coils 24, 25 of insulated wire mounted on the same rotor tooth, with each coil wound around a single tooth only and with a terminal of each of the coils being connected to different segments of the commutator 22 (see figure 6). Takahashi teaches the use of equalizers to reduce the number of brushes needed.

Claims 1, 3, 4, 27, and 28 are rejected under 35 U.S.C. 102(c) as anticipated by Takahashi (as set forth above) or, in the alternative, under 35 U.S.C. 103(a) as obvious

Art Unit: 2834

over Takahashi in view of Shiraki et al. (US 4876472). Takahashi teaches every aspect of the invention. The examiner maintains that the stator having 2P poles and the rotor core being ferromagnetic is inherently in Takahashi, but for the sake of thoroughness a second rejection based on Shiraki showing that permanent magnet stator motors having ferromagnetic cores and 2P magnets to provide high torque at low speeds. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Takahashi with a ferromagnetic rotor core and 2P poles on the stator to provide a high torque, low speed motor, as taught by Shiraki. The examiner notes the 35 USC 103 rejections are made over both Takahashi alone and over the combination of Takahashi and Shiraki, as set forth below.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

Art Unit: 2834

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 2, 15, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (and Shiraki), in further view of Ward (US 5,121,021). Takahashi teaches every aspect of the invention except the motor having a permanent magnet stator with a magnetic core and the magnetic circuit having a metal powder. Ward teaches a permanent magnet motor with a soft magnetic core for supporting permanent magnets. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Takahashi with the permanent magnet stator of Ward to provide a field magnet for the motor with reduce eddy current losses.

7. Claims 16 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (and Shiraki) and Ward, in further view of Wong et al. (Wong) (US 5,304,885). Takahashi and Ward teach every aspect of the invention except the center part of the rotor/stator teeth having rounded edges. Wong teaches rotor poles with rounded edges. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Takahashi and Ward with rounded edges on the rotor poles because Wong teaches rounded edges improves airflow and prevents carbon dust build up.

Art Unit: 2834

8. Claims 17-19 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (and Shiraki) and Ward, in further view of Case et al. (Case) (US 3,095,515). Takahashi and Ward teach every aspect of the invention, except the poles having the same axial length as the coil with the tips being axially longer, and the commutator extending under the tips. Case teaches the tips 48, 50 axially longer than the poles with the commutator 54 extending under the tips to allow for electrical connection with the coils. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Takahashi and Ward with the commutator and poles of Case to provide a small motor.

9. Claims 20 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (and Shiraki) and Ward, in further view of Katagiri (US 5,949,172). Takahashi and Ward teach every aspect of the invention, except the skew pole tips on unskewed teeth. Katagiri teaches skewed pole tips in figures 10a and 10b on unskewed teeth. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Takahashi and Ward with the commutator and poles of skewed poles of Katagiri to prevent cogging.

Response to Arguments

10. Applicant's arguments with respect to claims 1-4 and 15-28 is moot in view of the new grounds of rejection.


Art Unit: 2834

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai whose telephone number is (703) 305-7066 until February 1, 2004, or at (571) 272-2036 after February 2, 2004.

The examiner can be normally contacted on Monday through Friday from 8:00 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Nestor Ramirez, can be reached at (703) 308-1371. The facsimile number for the Group is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Karl I Tamai
PRIMARY PATENT EXAMINER
January 5, 2004



KARL TAMAI
PRIMARY EXAMINER